

Newborns should be screened for heart defects, study shows

2 May 2012

There is now overwhelming evidence that all babies should be offered screening for heart defects at birth, according to a major new study published online in *The Lancet*.

Heart defects are the most common type of [birth defects](#) in the UK. Although newborns often show no visible signs of the condition, if not treated promptly it can be fatal.

The research, led by a Queen Mary, University of London academic with a colleague from the University of Birmingham, shows that a non-invasive test called [pulse oximetry](#) offers an accurate and cost effective screening tool.

Pulse oximetry measures the amount of oxygen circulating in the blood stream using a sensor placed on a thin part of the body such as the fingertip, or earlobe, or in the case of the newborn, the foot.

[Heart defects](#) in [newborns](#), also known as [congenital heart disease](#), affect almost one percent of [babies](#) born in the UK each year - around 5,000 in total.

Previous research indicates that around half of these babies will be undiagnosed when mother and baby are discharged from hospital. Surgery can successfully treat the most serious cases but it is most effective when the defect is picked up early.

The new research, which brings together the results of 13 separate studies, is the largest of its kind and includes data on close to 230,000 babies.

It shows that pulse oximetry can successfully detect birth defects and that it is most accurate when used to screen babies around 24 hours after birth. Researchers say it could easily be combined with existing newborn screening which checks for other, less common types of birth defects

Results showed that using pulse oximetry picked up more than three quarters (76.5 per cent) of heart defects.

They also showed that the test hardly ever wrongly diagnosed healthy babies as having a heart defect. This means that there is very little unnecessary stress for parents given an incorrect diagnosis of a heart defect.

Currently some heart defects are picked up by ultrasound scan carried out when a woman is around 20 weeks pregnant or by physical examination of the newborn baby, but many cases are missed.

The research was led by Dr Shakila Thangaratnam, a Clinical Senior Lecturer at Queen Mary, University of London. She said: "Heart defects in newborn babies are thankfully rare but their potential impact is devastating.

"This study is really important because by including such large numbers of babies, we can show that pulse oximetry is effective at picking up defects, without misdiagnosing healthy babies. Previous research also indicates that it is cost-effective.

"This study is the best evidence yet that using pulse oximetry to screen for heart defects should be included in the newborn health checks."

Provided by Queen Mary, University of London

APA citation: Newborns should be screened for heart defects, study shows (2012, May 2) retrieved 2 May 2021 from <https://medicalxpress.com/news/2012-05-newborns-screened-heart-defects.html>

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